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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/549,758

10/06/2006

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25944 7590 05/28/2008

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EXAMINER

MILLER HARRIS, AMBER R

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |  |   |  |
|------------------------------|--|---|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/549,758   | <b>Applicant(s)</b><br>MATSUBARA ET AL. |  |
|                              | <b>Examiner</b><br>AMBER MILLER HARRIS | <b>Art Unit</b><br>1797                 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/19/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Drawings***

2. Figures 1A-C, 2B, 4A, 5C, 7B and 8B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 1-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Hamanaka et al. WO 03/011427 A1 (Translation provided by US 2004/0211164) in view of Hijikata WO 2002/079618 (translation provided by US 7,087,286).

5. Regarding claims 1-5, the Hamanaka et al. reference discloses a honeycomb structure comprising: a segment part including a plurality of first honeycomb segments bonded together by a bonding material (figure 15, objects 8 and center segments), the plurality of first honeycomb segments having a plurality of through holes passing

through along a one axis and being separated by partition walls (figure 2(c) objects 3 and 2); and a plurality of second honeycomb segments arranged in the periphery of the segment part in a cross section perpendicular to the one axis, bonded and integrated with the segment part (figure 15 objects 12 and 8), having a plurality of through holes passing through along the one axis and being separated by partition walls (figure 2(c) objects 3 and 2), a cross sectional area of the first honeycomb segments is smaller than the cross sectional area of the second honeycomb segments in the cross section perpendicular to the one axis (figure 15, object 12 and center segments), a cross sectional area of the segment part is equal to or above  $1/3$  and equal to or below  $1/2$  of the cross sectional area of the entire honeycomb structure in the cross section perpendicular to the one axis (figure 15, object 12 and center segments, and page 5 paragraph [0060]), the cross sectional area of the first honeycomb segment is smaller than a square area with 40mm sides, the cross sectional area of the second honeycomb segment is larger than a square area with 30mm sides, wherein, the cross sectional area of the second honeycomb segment is 4 times or greater than the cross sectional area of the first honeycomb segment (figure 15, object 12 and center segments, and page 5 paragraph [0060]). The reference does not disclose the center segments of figure 15 being separated by a bonding material.

6. The Hijikata reference discloses segments being separated by a bonding material (column 4, lines 49-52).

7. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Hamanaka et al. reference to include

segments being separated by a bonding material (Hijikata column 4, lines 49-52) because this provides heat resistance and cushioning to the honeycomb segments.

8. For claims 7-11, the Hamanaka et al. reference does not explicitly state, the cross sectional area of the first and the second honeycomb segments are adjusted that an increase of a pressure loss is equal to or less than 20%, assuming that the pressure loss of exhaust gas passing through a same shaped honeycomb structure only formed by bonding honeycomb segments having square cross sections with 35mm side. The reference does disclose the square cross sections with 35mm sides (page 5 paragraph [0060]) and the need to optimize the size of the segment in order to obtain a desired pressure loss (page 3 paragraph [0036]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the cross sectional area of the first and the second honeycomb segments are adjusted that an increase of a pressure loss is equal to or less than 20%, assuming that the pressure loss of exhaust gas passing through a same shaped honeycomb structure only formed by bonding honeycomb segments having square cross sections with 35mm side, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

9. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamanaka et al. WO 03/011427 A1 (Translation provided by US 2004/0211164) and Hijikata WO 2002/079618 (translation provided by US 7,087,286) as applied to claim 1

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above, and further in view of Kondo et al. WO 03/021089 A1 (Translation provided by US 2004/0206044).

10. For claim 6, the Hamanaka et al. reference does not disclose a cross sectional shape of the honeycomb structure in the cross section perpendicular to the one axis is irregular.

11. The Kondo et al. reference discloses a cross sectional shape of the honeycomb structure in the cross section perpendicular to the one axis is irregular (page 4, paragraph [0041]).

12. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Hamanaka et al. reference to include a cross sectional shape of the honeycomb structure in the cross section perpendicular to the one axis is irregular (page 4, paragraph [0041]) in order to enhance the isostatic strength of the structure.

13. For claims 12, the Hamanaka et al. reference does not explicitly state, the cross sectional area of the first and the second honeycomb segments are adjusted that an increase of a pressure loss is equal to or less than 20%, assuming that the pressure loss of exhaust gas passing through a same shaped honeycomb structure only formed by bonding honeycomb segments having square cross sections with 35mm side. The reference does disclose the square cross sections with 35mm sides (page 5 paragraph [0060]) and the need to optimize the size of the segment in order to obtain a desired pressure loss (page 3 paragraph [0036]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the cross

sectional area of the first and the second honeycomb segments are adjusted that an increase of a pressure loss is equal to or less than 20%, assuming that the pressure loss of exhaust gas passing through a same shaped honeycomb structure only formed by bonding honeycomb segments having square cross sections with 35mm side, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMBER MILLER HARRIS whose telephone number is (571)270-3149. The examiner can normally be reached on Mon-Thur (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AH

/Walter D. Griffin/  
Supervisory Patent Examiner, Art Unit 1797